

In 1946 the writer collected at the original habitat of *P. hippocrepis* near Comal Springs the following shells in the order of their abundance: *Polygyra hippocrepis* (Pfr.), *Holospira goldfussi* (Menke), *Microceramus texanus* (Pils.), *Euglandina singleyana* (W. G. Binney), and *Retinella indentata paucilirata* (Morelet). The last three species named were in larger abundance than in any of the other stations discussed. Other species were found sparingly. This is the more remarkable since this area is overrun by visitors to the park, and is separated from it only by the creek that flows from the springs.

Along the road between New Braunfels and Landa Park, nine species were collected, the most prolific being: *Helicina orbiculata tropica* (Pfr.), 83; *Polygyra mooreana* (W. G. Binney), 30; *Polygyra texasiana* (Moricand), 29; *Bulimulus dealbatus mooreanus* (Pfr.), 15; *Praticolella berlandieriana* (Moricand), 14.

The urban area of New Braunfels. Eight species collected, the most prolific being: *Rumina decollata* (L.), 74; this is the first record of *Rumina* from Comal County. *Helicina orbiculata tropica* (Pfr.), 36; *Bulimulus dealbatus mooreanus* (Pfr.), 15.

I am indebted to Dr. Allan F. Archer and Dr. H. A. Pilsbry for checking all these lists and clearing some problems in their synonymy.

[To be concluded]

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## NEW MARINE MOLLUSKS OF FLORIDA AND THE BAHAMAS

BY H. A. PILSBRY AND T. L. MCGINTY

### APODOSIS, new genus

The shell is small, thick, oblong-conic, spirally striate, with rather narrowly ovate aperture about half as long as the shell, having a single submedian entering fold at junction of columellar and parietal margins; outer lip and columella very thick, plain within. The internal partitions and columellar axis are absorbed above the last whorl, as usual in this family.

The relations of this snail appear to be with a group of genera beginning with *Stolidoma* Deshayes, but that Paleocene and

Eocene genus differs by having a much more lengthened, thin, polished shell, with a median fold as in our snail, but having the columella indistinctly subtruncate at the base, while in *Apodosis* it passes by an even curve into the basal margin.

Turning to genera still represented by living species, we have been strongly inclined to treat *Apodosis* as a subgenus of the antipodal genus *Leuconopsis* Hutton,<sup>1</sup> of New Zealand and eastern Australia, but it differs from that by the much more solid oblong-conic (instead of ovate-conic) shell with non-impressed suture, and the outer lip is strongly thickened within, not thin as in *Leuconopsis*. The same characters and the single submedian fold of the aperture rule out a reference to *Leucophytia*,<sup>2</sup> *Microtralia*,<sup>3</sup> or other groups which have been associated with the name *Leuconia* Gray, and have already been discussed by Watson,<sup>4</sup> Pilsbry and others. When the dentition is examined the affinities of *Apodosis* should be clarified. Unfortunately none of our specimens contains the soft parts.

APODOSIS NOVIMUNDI new species. Plate 1, fig. 1.

The shell is quite solid and strong, imperforate, oblong-conic, pale brown. The outlines of the spire are a little convex, the whorls nearly flat, the suture distinct but scarcely impressed; the first whorl convex, smooth and glossy, later whorls matt, evenly sculptured with very fine spiral striae. The aperture is narrowly ovate, acutely angular posteriorly, rounded in front. The outer and basal margins of the peristome are thick within the sharp edge; columellar margin wide, concave; parietal callus a thin, transparent wash. Slightly below the mid-length of the aperture there is a strong entering fold at the junction of columella and parietal wall; as the fold does not emerge quite to the plane of the aperture it appears weak in a direct face view of an adult shell. It enters about one whorl.

Length 3.4 mm., diameter 1.8 mm.  $5\frac{1}{2}$  whorls.

Clifton Bluff, New Providence, Bahamas, type 185474 ANSP., paratypes in McGinty collection. Collected by T. L. and P. L. McGinty, 6-7-1947.

<sup>1</sup> Hutton, F. W., 1884, Trans. N. Z. Inst. 16: 213, type *L. obsoleta* Hutton.

<sup>2</sup> Winckworth, R., 1949, Jour. of Conch. 23: 38, type *L. bidentata* (Montagu).

<sup>3</sup> Dall, Wm. H., 1894, Bull. M. C. Z. 25: 117, type *Auricula?* (*Microtralia*) *minuscule* Dall. Cf. Pilsbry, 1927, Nautilus 40: 125, 126.

<sup>4</sup> Watson, Hugh, 1943, Jour. Conch. 22: 17-20.

The superficial spiral striation is often lost by slight erosion.

CORALLIOPHILA MANSFIELDI (McGinty). Plate 1, figs. 2, 3.

*Muricidea mansfieldi* McGinty, 1940, Nautilus 53: 83, pl. 10, figs. 5, 5a.

This species was originally described from a male specimen taken in the Pliocene at Clewiston. It has now been found living at the North Inlet of Lake Worth, under stones in shallow water, and elsewhere. We give figures of both sexes from this place, the specimens collected by Virginia (Mrs. J. W.) Donovan. A description of the female follows. The male is a much smaller shell, often more strongly carinate.

The shell is white, solid and strong, biconic, imperforate but having a concave umbilical area bounded by a scaly siphonal fasciole. The nucleus is conic, buff, of three smooth, somewhat convex whorls, sometimes minutely plicate below the suture, the last nuclear half whorl narrow, ending with a very small variceal ridge. (The apex is more or less worn in adult shells seen. It is described from a young shell 10 mm. long.) Later whorls have a median keel and axial sculpture of strong, slightly retractive axial waves, about eight on the last whorl. Spiral sculpture of closely scaly cords of which there are about 7 or 8 above the peripheral keel, which is emphasized by a stronger spiral cord extended in flattened lobes or short triangular spines where it crosses the axial waves. Below the peripheral angle there are about 10 scaly spiral cords and a few smaller ones in the interstices. The aperture is oval, with 8 lirae a short distance within the outer lip. Anterior canal narrow but deep.

Length 30.7 mm., diameter 20 mm., length of aperture and canal 18.4 mm., 7 whorls, the nucleus lost, ♀.

Length 19.6 mm., diameter 15.4 mm. ♂

The operculum is aniline yellow.

This beautiful shell is doubtless a close relative of such Mediterranean coralliophilas as *lamellosa* Jan, *babelis* Requier and other forms which Monterosato assembled as varieties of *C. bracteata* (Brocchi), which should be compared when a sufficient series of that species is available. In America *C. mansfieldi* appears to be related to *C. lintoni* (Verrill and Smith),<sup>5</sup> from off Marthas Vineyard in 70 fathoms, but that species is not

<sup>5</sup> *Trophon lintoni* Verrill & Smith, Trans. Connecticut Acad. 6: 176, pl. 29, fig. 1.

angular and the outer lip is smooth within, not lirate as in this species.

*C. mansfieldi* occurs in Lake Worth as stated above and has also been taken off Lantana in 100 fathoms, on the Venetian Causeway, Biscayne Bay, and at Destin in 20 fathoms, northwest Florida.

There is considerable variation in the sculpture. In Biscayne Bay specimens the spirals above the shoulder are small with shallow intervals, those of the base high with deep intervals. In some specimens from Lake Worth the spirals above the shoulder are very weak.

MITRA FORDI, new species. Plate 1, fig. 4.

The shell is rather stoutly fusiform, the diameter somewhat exceeding one-third of the length; solid, white with a broad girdle of burnt sienna streaks above the periphery, part of them extending to the suture, and a paler, more diffuse band in the subbasal concavity of the whorl; the spire irregularly streaked, summit white. About  $6\frac{1}{2}$  whorls remaining in adult specimens are convex, the last somewhat shouldered. The nucelus retained in young shells is very small (diameter of first whorl 0.4 mm.), mamillar, smooth and glossy, of about  $1\frac{3}{4}$  convex whorls, the first globose, but the last half turn is very narrow, Fig. 4a, b. Four crenulated spiral cords then appear, at first as mere traces. The whorls of the spire have four rather coarse rounded spirals, finely crenulated by axial striae which are much more developed in the intervals of the cords (in unworn shells). On the last whorl there are about fourteen spiral cords and about seven much smaller on the siphonal fasciole. The second cord from the suture is more prominent. The aperture is about half the length of the shell, rather narrow. Outer lip straightened in the middle, broadly curved into the basal margin. Columella with four folds. Anterior canal broad and deep.

Length 30.7 mm., diameter 12.3 mm.

Length 30 mm., diameter 11.5 mm.

Length 28 mm., diameter 11.4 mm.

New Providence, Bahamas, type and paratypes 185479 ANSP., other paratypes in the Ford and McGinty collections, all collected by the Rev. Paul D. Ford, in whose honor the species is named. Also taken at Gun Cay, Bimini Is. by T. L. McGinty.

In beach specimens the color markings, which are mahogany red in the darkest examples, fade to orange rufous or a lighter tint.

## MITRA FLUVIIMARIS new species. Plate 1, fig. 5.

The shell is fusiform, white with some brown stains under a thin, light brown epidermis; of about 7 rather weakly convex postnuclear whorls. The nucleus is minute, conic, of  $4\frac{1}{2}$  smooth, lightly convex whorls, the last narrower than the preceding. Later whorls have sculpture of five blunt spiral cords (or seven, counting those at the suture above and below) on each whorl of the spire. Somewhat crenulated by axial threads which are much more prominent in the intervals of the cords. The last whorl has about 14 to 18 cords, plus about 8 very small ones at the anterior end. The aperture is more than half of the length of shell, narrow, passing into a shallow anterior canal. There are four columellar folds, the anterior one quite weak.

Length 28.8 mm., diameter 9.5 mm., length aperture 15.3 mm.  
Type.

Length 27.7 mm., diameter 9.3 mm., length aperture 14.5 mm.

Off Palm Beach, Florida, in 100 fathoms, type 185476 ANSP., paratypes in the Donovan and McGinty collections. Also dredged off the Keys by J. B. Henderson (U. S. Nat. Mus.).

This miter, known only from the border of the Gulf Stream in Florida, is peculiar for its long embryonic shell of  $4\frac{1}{2}$  smooth whorls, Fig. 5a.

It is probably what has been identified as *M. straminea* A. Adams (Proc. Zool. Soc., 1851, p. 132), an imperfectly described species of unknown locality, which from Sowerby's figure (Thes. Conch. 4, pl. 25, fig. 561) has a relatively wider aperture, and measures 22 mm. long.

## THERICIUM BIMINIENSE, new species. Plate 1, fig. 6, 6a, 6b.

The oblong-conic rather solid shell tapers regularly from the last whorl to the apex, the lateral outlines of the spire being about straight. The surface is matt and smoothish in all adult shells seen being slightly corroded, but in immature shells a fine and very weak spiral striation is visible on the somewhat shining surface of the last whorl, and in a middle stage of growth there are very low axial folds, more prominent midway between sutures. On a white ground there are irregularly bent or sometimes branched axial stripes of brownish black, extending from suture to base or interrupted. The aperture is about half the length of shell, broadly oval, acutely angular posteriorly, passing into the short channel anteriorly; within either brownish and showing dark stripes or white. The peristome is edged with brown, dark or light, or it may be entirely white.

Length 11.5 mm., diameter 6.7 mm.;  $6\frac{1}{2}$  whorls. Type.  
Length 11 mm., diameter 6.8 mm.;  $6\frac{1}{2}$  whorls.

Turtle Rocks, Bimini Is., Bahamas, type 185468 ANSP., paratypes in McGinty collection. Also taken in deep tide pools at south end of South Bimini Island. Collected by T. L. and P. L. McGinty, 5-22-1947.

The nuclear whorls are lost by erosion in all adults seen. In an immature shell 6.4 mm. long there are 8 whorls, two nuclear whorls being quite convex and apparently smooth.

In size, shape and characters of the aperture this species resembles *T. variabile* (C. B. Adams), but that species has spiral cordons of tubercles with spirally striate intervals, of which *T. biminiense* shows no trace.

AMPHITHALAMUS DYSBATUS, new species. Plate 1, fig. 7.

The shell is solid, very narrowly rimate, ovate-conic, but truncate in the adult stage, clove brown in color, somewhat glossy, without sculpture except for occasional faint lines of growth. The spire tapers rapidly, the whorls remaining being only weakly convex, the last whorl being dilated transversely (that is, somewhat flattened between dorsal and ventral sides), only slightly convex above and below the convex peripheral region. The suture is only superficially impressed, and at the end descends steeply to the upper angle of the aperture, somewhat as in the genus *Stenothyra*. The aperture is either vertical or somewhat advanced below, ovate, the parietal side flattened. The peristome is very thick, obtuse, flesh tinted, continued in a thick parietal callus with abrupt edge, not appressed to the preceding whorl, there being a groove between callus and the surface of the whorl.

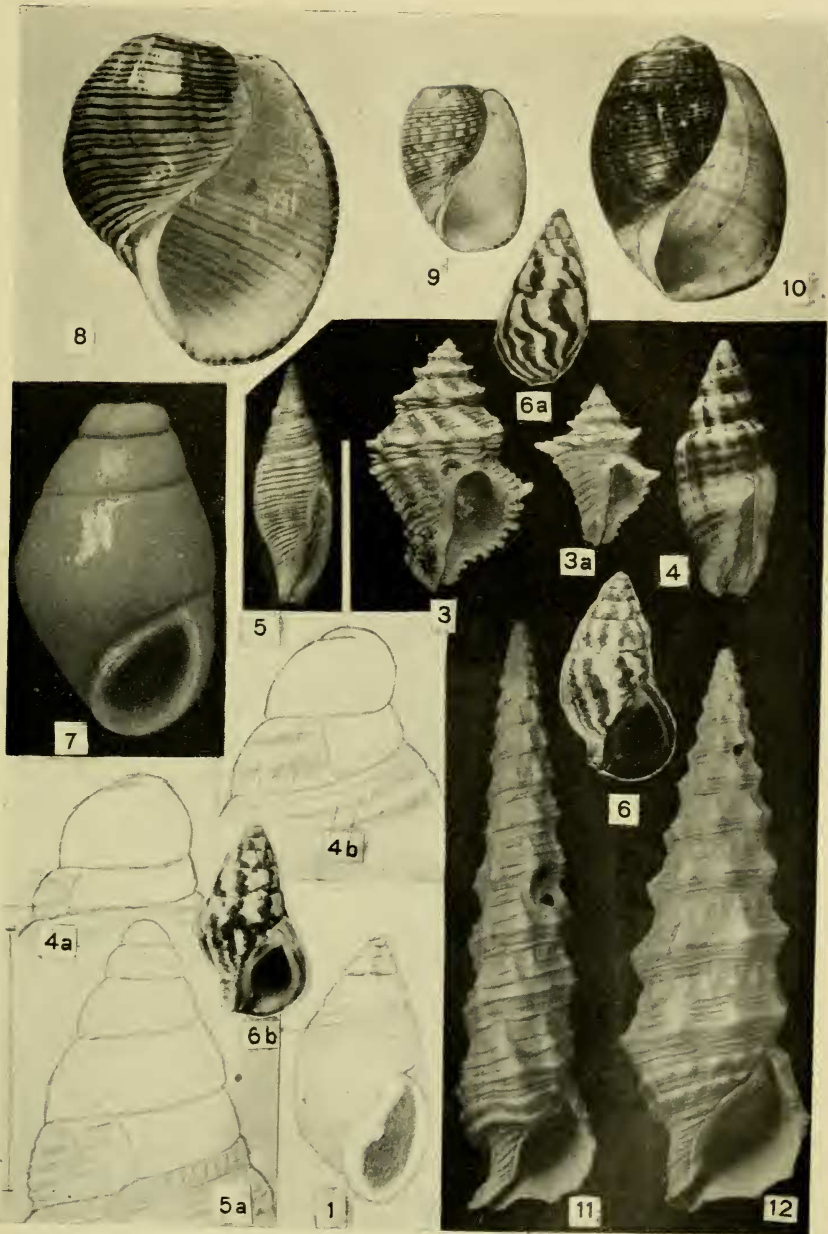
Length 3.4 mm., diameter 2 mm. Type.

Length 3.3 mm., diameter 1.9 mm. Paratype.

The operculum is very thin, oblong, the columellar margin moderately convex, scar of attachment long and narrow. The nucleus is probably near the base, but no spiral figure could be made out in the specimen mounted.

Snake Creek, Plantation Key, in the upper Florida Keys, type 185478 ANSP., paratype in McGinty collection, collected by T. L. McGinty, May, 1945.

The shell has the appearance of a fresh water snail, but Snake Creek is a purely salt water inlet.



1, *Apodosis novimundi*. 3, 3a, *Coralliophila mansfieldi* ♀ & ♂. 4-4b, *Mitra fordii*. 5, 5a, *Mitra fluviimaris*. 6-6b, *Thericium biminicuse*. 7, *Amphithalamus dysbatus*. 8, *Hydatina vesicaria*; 9, small form. 10, *Hydatina verrilli*. 11, *Thericium chara* Pilsbry, length 22.7 mm., Hudson, Fla. 12, *T. lymani* Pils., 1. 24 mm., Hudson.